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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,212

08/09/2006

Peter Hille

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EXAMINER

NGUYEN, CUONG H

ART UNIT

PAPER NUMBER

3661

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,212	Applicant(s) HILLE ET AL.	
	Examiner CUONG H. NGUYEN	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/09/2006 (the pre. amendment).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/09/2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is the answer to the communication received on 8/09/2006.
2. Claims 1-8 are pending in this application.

Priority

3. The applicant claims a Germany priority of 11/26/2003.

Drawing objections

4. A sole drawing submitted on 8/09/2006 is not sufficiently reflect a pending claimed method for shortening the stopping distance of a vehicle because claimed limitations are not sufficiently disclosed. A correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying references, except when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. For such patents, the prior art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

5. Claims 1-4, 6 are rejected under 35 U.S.C. § 102(e) as being anticipate by Von Holt et al. (US Pub. 20060163943 A1).

A. As per pending claim 1: Von Holt et al., already teach a method for shortening the stopping distance of a vehicle in which a braking operation is prepared when a predefined event occurs (applying a brake clearly to shortening a stopping distance – this is abundantly clear for a vehicle), characterized in that the braking operation is prepared if a driving situation which is implausible to a driving assistance system occurs (see Von Holt et al., para. [0003]), “ *German Published Patent Application No. 43 10 354 describes an adaptive cruise control system of this type, in which, when the vehicle approaches another vehicle traveling ahead and the distance drops below a certain warning distance, initially a relatively gentle warning braking is performed to prepare the driver and the passengers, as well as any traffic behind the vehicle, for an imminent braking maneuver, and in which, if the distance to the vehicle ahead further decreases, automatic intervention in the braking system takes place with the objective of regulating the distance to the setpoint distance. According to this approach, warning braking is also to be used for gaining more information about the coefficient of friction of the roadway, which is a function of the roadway characteristics, the condition of the tires, and the weather conditions and in turn affects the brakability and thus the stopping distance of the vehicle. The information gained during warning braking about the coefficient of friction is used for changing*

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the setpoint value of the adaptive cruise control. If, during warning braking, it turns out that the roadway has a relatively low coefficient of friction, a longer setpoint distance is selected to increase driving safety. “

B. As per pending claim 2: Von Holt et al. already teach that a pilot braking pressure is generated in order to prepare the braking operation (see Von Holt et al., , para. [0015] *“In order to determine, as accurately as possible, the vehicle's ability to decelerate, it is expedient to increase the braking pressure during warning braking to the point that at least one of the wheels is briefly locked, which results in maximum slip. The coefficient of friction may then be accurately determined for the locked wheel using known methods, for example, using the braking force at which the wheel locks up, or optionally using the angular acceleration with which the wheel re-accelerates after the brake is released. This angular acceleration is given by the torque, which is a function of the coefficient of friction, divided by the known moment of inertia of the wheel.”*).

C. As per pending claim 3: Von Holt et al. also teach that a speed-dependent pilot/warning braking pressure is generated (see Von Holt et al., para. [0030] *“As long as a certain delay remains between warning braking t_0 and emergency braking t_1' , braking force F is increased at time t_1' at a high rate to value F_s also in this case. Since this value is already known, braking pressure overshooting may be avoided despite the rapid buildup of braking pressure. The braking pressure is subsequently modulated again in the customary manner.”*).

D. As per pending claim 4: Von Holt et al. also teach that that the braking operation is prepared if the driver is requested by a driving assistance system to assume the control of the vehicle and/or to brake.

It is inherent that a driver may decide/command to brake anytime for controlling a vehicle – this meet above claim’s language.

E. As per pending claim 6: Von Holt et al. also teach that objects are sensed in front of the vehicle (e.g., in a same lane) causing impact/collision to that vehicle (see Von Holt et al., para. [0022] “Data received by situation analyzer unit 10 for each object located by the radar sensor includes measured distance D of the object, relative velocity Vr of the object determined based on the Doppler shift, and angular data (not shown), on the basis of which a decision may be made on whether the located object is on the same lane and thus represents a relevant obstacle. For the sake of simplicity, it was assumed in FIG. 1 that only a single relevant object is present. Situation analyzer unit 10 decides, on the basis of the distance and relative velocity data, whether there is a risk of collision. For this purpose, situation analyzer unit 10 calculates whether it is possible to reduce measured relative velocity Vr within distance D to zero using full braking of the vehicle, or what residual relative velocity (impact velocity) remains if distance D has been reduced to zero. To calculate the deceleration of the vehicle when full braking is used, a realistic value should be used as a basis, which is a function of a plausible estimate of the roadway's coefficient of friction and of the vehicle's service weight if no previous information is available”).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be

patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, and 7- 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Von Holt et al. (US Pub. 20060163943 A1).

A. As to dependent claim 5: The rationales and reference for rejection of claim 1 are incorporated.

This claim requires a limitation of braking operation is prepared if a driving assistance system is deactivated.

It is obvious that for driving safety – a control of a vehicle (i.e., manually braking capability) is transferred back to a driver when an autonomous mode (i.e., a driving assistance is turned off).

B. As to dependent claim 7: The rationales and reference for rejection of claim 1 are incorporated. Because the language of this claim represents options (i.e., using “and/or”) a condition is enough to meet this claim’s limitation.

Van Holt et al. teach that with respect to an object in the area in front of the vehicle are determined and if the value drops below or exceeds a reference distance, a reference relative speed or a reference acceleration the braking operation is prepared (see Von Holt et al., para. [0022] “Data received by situation analyzer unit 10 for each object located by the radar sensor includes measured distance D of the object, relative velocity Vr of the object determined based on the Doppler shift, and angular data

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(not shown), on the basis of which a decision may be made on whether the located object is on the same lane and thus represents a relevant obstacle. For the sake of simplicity, it was assumed in FIG. 1 that only a single relevant object is present. Situation analyzer unit 10 decides, on the basis of the distance and relative velocity data, whether there is a risk of collision. For this purpose, situation analyzer unit 10 calculates whether it is possible to reduce measured relative velocity V_r within distance D to zero using full braking of the vehicle, or what residual relative velocity (impact velocity) remains if distance D has been reduced to zero. To calculate the deceleration of the vehicle when full braking is used, a realistic value should be used as a basis, which is a function of a plausible estimate of the roadway's coefficient of friction and of the vehicle's service weight if no previous information is available. Previous information is usually available for the service weight of the vehicle, since it is possible to estimate this service weight more or less accurately within the ACC regulation on the basis of the vehicle's acceleration response and the propulsion torque available in the engine management system.”).

In their teaching, a distance, and a velocity of an object in front are measured and taken into account to command a vehicle's brake.

C. As to dependent claim 8: The rationales and reference for rejection of claim 1 are incorporated.

Von Holt et al., use an electronic stability program (ESP) for stabilizing vehicle dynamics (see Von Holt et al., para. [0006]).

It has been obvious to one of ordinary skill in the art to implement claim 1's step suggested by Von Holt et al., using software to control a vehicle for the advantage of flexibilities

in changing programming codes that control shortening a stopping distance of a vehicle without changing many hardware components.

Conclusion

7. Claims 1-8 are not patentable.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CUONG H. NGUYEN whose telephone number is 571-272-6759. The examiner can normally be reached on 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, THOMAS G. BLACK can be reached on 571-272-6956. The Rightfax number for the organization where this application is assigned is 571-273-6759.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Please provide support, with page and line numbers, for any amended or new claim in an effort to help advance prosecution; otherwise any new claim language that is introduced in an amended or new claim may be considered as new matter, especially if the Application is a Jumbo Application.

/CUONG H. NGUYEN/
Primary Examiner
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